

Appl. No. 10/539,795; Docket No. NL 030180 US
Amdt. dated October 11, 2006
Response to Office Action dated September 7, 2006

Amendments to the Specification

In the Abstract, please amend as shown. A separate sheet containing a clean version of the latest version follows the Remarks Section of this paper.

The present invention provides a special structure of magnetic elements, e.g. MRAM elements (10, 11), as a security device (30) for IC's containing magnetic memory cells. In an example embodiment, the The structure may comprise a combination of two or more associated magnetic elements (10, 11) with pre-set anti-parallel magnetization directions. By determining the polarisation directions of the magnetic elements, exposure to an external magnetic field can be detected. Inverse polarisation directions indicate a normal situation, aligned polarisation directions indicate that the MRAM-array has been exposed to an external field. In this way it can be detected whether it has been a user has tried to erase or alter the data stored in the MRAM in an illegal way. The IC can regularly check the resistance of the security system during operation. Upon detection of a field exposure, the IC can erase all MRAM data, ~~or can~~ reset itself ~~or or~~, block its functioning.

Fig. 1

In the Specification, page 1, lines 19-24, please make changes as shown.

Different kinds of magnetoresistive (MR) effects exist, of which the Giant Magneto-Resistance (GMR) and Tunnel Magneto-Resistance (TMR) are currently the most important ones. The GMR effect and the TMR or Magnetic Tunnel Junction (MTJ) or Spin Dependent Tunneling (SDT) effect provide possibilities to realize ~~a.o. non-~~ volatile non-volatile magnetic memories. These devices comprise a stack of thin films of which at least two are